

# Behavioral Anomalies and Energy-related Individual Choices: The Role of Status-quo Bias

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The gap between the actual and optimal rate of adoption of energy efficient appliances is usually referred to as the energy efficiency gap. The economic literature on the energy efficiency gap provides several explanations for the persistence of the gap in the residential sector, which are usually categorized into market failures and behavioral failures or behavioral anomalies. One such behavioral anomaly is the status-quo bias, that is an individual's tendency to do nothing or to maintain one's current or previous decisions. The theoretical literature suggest that status-quo biased individuals potentially refrain from replacing their old household appliances by newer and more efficient ones. Furthermore, theory suggests that the status-quo bias could make households use their appliances more intensely, due to a desire to justify the initial investment cost. While the relation between the status-quo bias and energy-related decisions of households has been discussed theoretically, no empirical testing of the relation has been performed so far.

This study is the first to empirically explore the role of status-quo bias for the replacement and use of household appliances. We conduct a multivariate regression analysis using data from a household survey among customers of European energy utilities. The results show that our measure of status-quo bias is an important predictor of both the age of home appliances and the level of consumption of energy services of a household. If an individual is status-quo biased the probability that the individual's household owns at least one appliance that is more than 10 years old increases by 4 percentage points. Also, we find that the consumption of energy services of a household increases by 5.4 percent when the household head is status-quo biased. The tendency of status-quo biased individuals to own older (less efficient) appliances and to use their appliances more is also reflected in the total electricity consumption of their households, which is found to be around 6% higher than the one of households with non-biased household heads.

Our results suggest that the status-quo bias is an important determinant of the level of energy consumption of European households. They inform behavioral models of consumer behavior about the channels through which the status-quo bias operates and have important policy implications. Given that the status-quo bias expresses a preference to stay with the current situation, rather than a lack-of knowledge or cognitive ability, it is more difficult to address with policy measures than other behavioral anomalies. It may then constitute a severe limit to policy-makers' opportunities to narrow the energy efficiency gap. Yet, our findings offer guidance to policy makers about what range of policy measures might be more effective in overcoming the consequences of the status-quo bias and prompt to the importance of tailoring alternative policies for individuals with different characteristics.

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